



Happy NEW YEAR!



Don't forget about...

Healthy Lifestyles Summit

Columbia, SC, January 29-31, 2016

DEADLINE: January 13, 2016

Registration Contact: Miriam Roman
803-968-5788

mroman@clemson.edu

(Don't forget to pay if you've already registered!)

Junior Weekend

Camp Bob Cooper (near Summerton)
February 5-7, 2016

DEADLINE: January 22, 2016

Contact your local County Extension
Office to register

****CORRECTION****

The previous newsletter listed incorrect dates for the Forestry Clinic at Webb Wildlife Center. The clinic will be held **March 11-13, 2016** (Friday – Sunday).



Wildlife Food Plot Project

In August, more than one hundred 4-H'ers across the state geared up for the South Carolina Wildlife Food Plot Project. Registration was \$15 and, this year, included the food plot seed and a membership to [QDMA's Rack Pack](#). Below are few pictures of youth hard at work! Record books are due in January; and, we hope to announce County, Regional, and State Projects Winners in February and March. For more information on the project, click [HERE](#).

Learn by doing!



Monthly 4-H Club Activity Idea *Adapted from Acres of Adventures 1*

Bag Mittens

Objective: To give youth a greater understanding of the scientific process and insulation properties of certain materials.

Age Range: All ages.

Hands-on Activity: Creating mittens out of plastic bags and testing the insulating ability of different materials

Life Skills: HEAD = critical thinking, problem solving, decision making;

HEART = communication, cooperation;

HANDS = leadership, contributions to group effort, teamwork;

HEALTH = self-esteem, character, healthy lifestyle choices, personal safety.

Introduction & Leading Questions

Burr!!! It's starting to get cold outside (finally) and you need to protect yourself against the winter weather.

What do you do to stay warm outside?

Wear a coat, hat, gloves, boots, scarf, etc.

How to winter clothes keep you warm?

They 'insulate' you from the cold!

What does the word 'insulation' mean?

'Insulation' is a noun that means something that prevents or, as in most cases, reduces the passage, transfer, or leakage of heat. Notice it says "HEAT", not cold. You aren't keeping the cold out when you insulate something, you are keeping the heat in.

Heat can be lost/transferred in 4 ways. Can anyone name them?

Conduction – direct contact/touching of an object to heat (solids). Metals are usually good conductors, meaning they transfer heat very well. For instance, an iron fire poker will conduct heat from the fire up the length of the handle and burn the hand of someone holding it unless an insulated glove is worn for protection.

Convection – movement of heat by circulation/movement of particles (liquids & gases). For example, warm air rises, as does water. Wind and water currents disperse heat through the atmosphere and oceans.

Radiation – waves of heat that emanate/radiate from hot object. Shiny surfaces, like aluminum foil, will reflect the heat back. On a hot summer day, heat from the sun can be felt radiating off of asphalt surfaces.

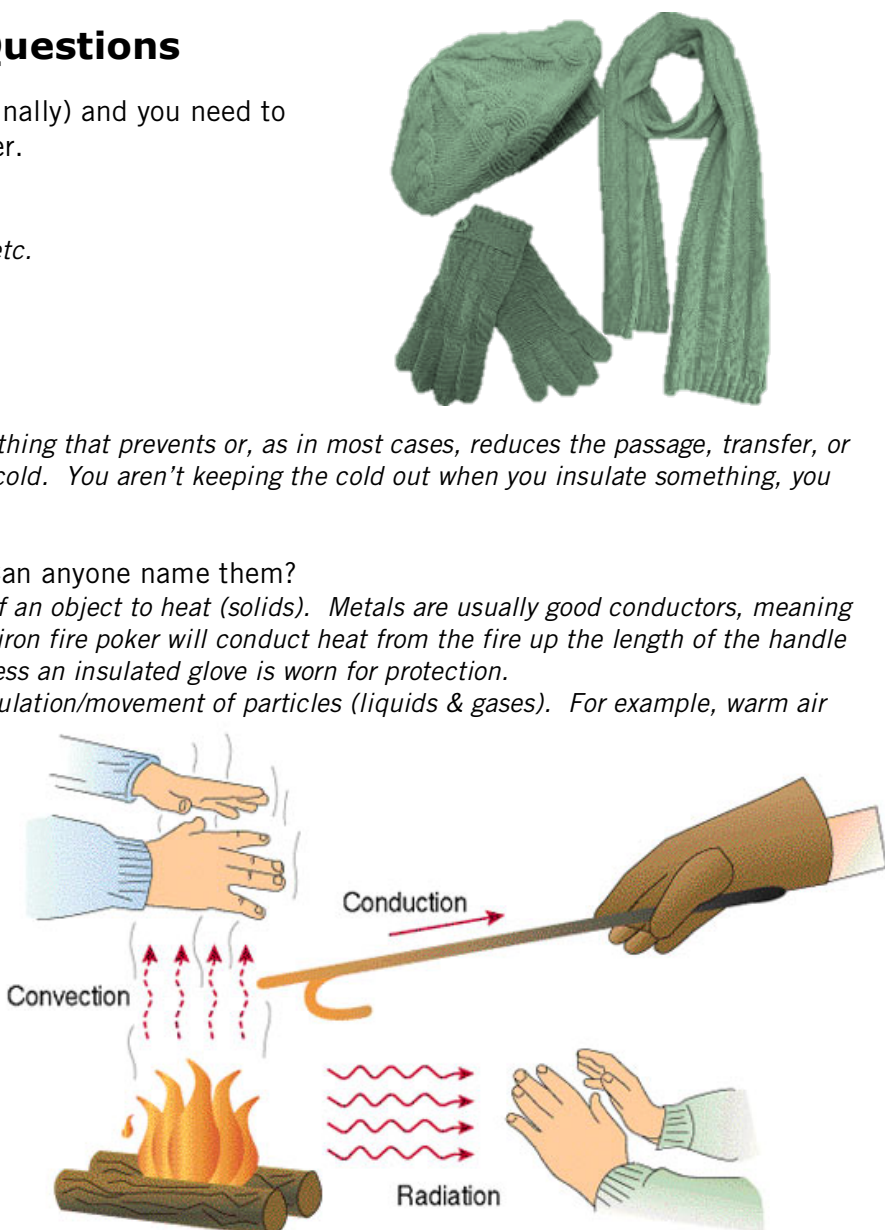
Evaporation – heat can be lost when liquids evaporate. That is why sweating helps cool your body when it gets hot.

Think of examples of where and when in your everyday life insulation is used.

Appliances – freezer, fridge, oven

Buildings – attic, walls, floor

Household items – oven mitts, coffee mugs, lunch coolers, etc.



For more information on thermal energy and heat transfer, click [HERE](#).

Hands-on Activity: How to

Bag Mittens

Materials Needed:

- Quart-sized zipper-type plastic bags
- Icepacks (or zipper-type bag filled with ice water)
- Marker for labeling mittens
- Pen and paper for recording results
- Various insulators (see options listed in step 1)

Step 1: Create your mittens by filling 1 zipper-type bag $\frac{1}{2}$ way with an insulation material, inverting a second bag, and sealing them together. Make at least 3 different types of mittens using various insulators. Options for insulation materials: air, cotton balls, bubble wrap (large vs. small bubble sizes), plastic bags, fleece, yarn (cotton, wool, polyester), sand (wet vs. dry), wood shavings, the choices are endless! Just make sure you have an option that represents a 'good insulator' and maybe a 'not-so-good insulator' for comparison purposes.

Step 2: Decide as a group *how* you are going to evaluate the insulation value of your different bag mittens. There are several options here. For scientific purposes, you will want to come up with a measure that is as objective and quantifiable as possible, such as exact temperature or time measurements.

- You could have 4-H'ers hold the icepacks with the mittens and record the length of time it took for them to sense the cold through the mittens.
- If you have a thermometer, you could place it inside the mitten while the icepack rests on top and record the temperature after a set amount of time.
- You could have 4-H'ers act as the thermometer by holding the icepacks for a set amount of time and report how cold their fingers got on a number scale or descriptors the group comes up with. (Don't let the time be too long. If the youth's hands become uncomfortably cold, instruct them to put the icepacks down.)

Choose the method that is most appropriate for the time/resources you have available, as well as the experience level of the youth.

Step 3: Conduct your experiment and record the results! Let everyone participate.

Step 4: Discuss your results! You can organize the data into a graph or figure to display the results. Figure 3 is an example of how the data could be represented for easy comparison. What was the best insulator? What was the worst insulator? What was the most difficult part of this activity? What would you do differently next time? What other materials would you like to test this way?

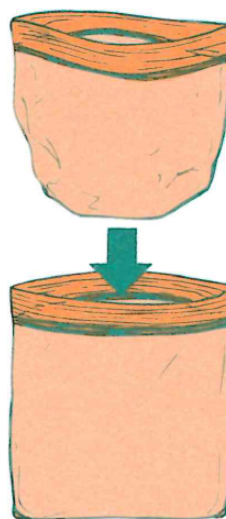


Figure 1. Turn one zipper-type bag inside out and insert it into a second bag that is right-side out and zip them together.

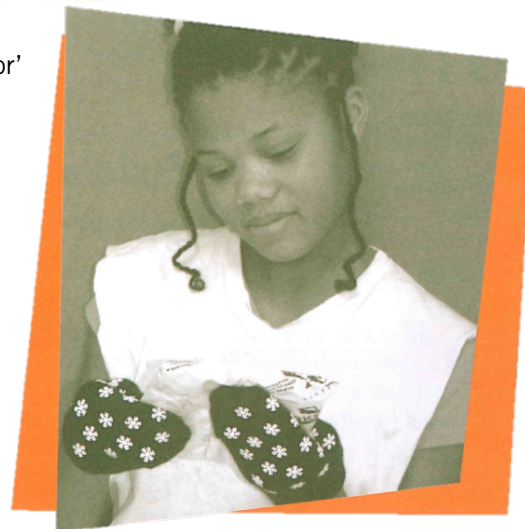


Figure 2. Test the insulation of different materials.

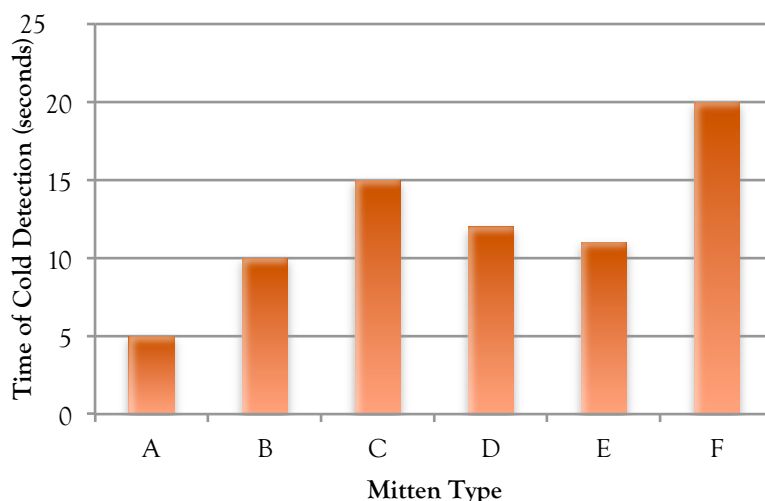


Figure 3. Graphical representation of hypothetical data relating to the insulation value of 6 different types of mittens (A-F), based on the amount of time it took for someone to detect cold from icepacks.